

APPENDIX U-1

EXECUTIVE SUMMARY OF INVESTIGATION OF REMOTE CONTROL UNITS



November 17, 2011

MEMORANDUM FOR NORMAN G. PAGE
Accident Investigation Team Leader

FROM: JOHN P. FAINI 
Chief, Approval and Certification Center

SUBJECT: Executive Summary of Investigation of Remote Control Units
Recovered from Performance Coal Company's Upper Big
Branch – South Mine

The Approval and Certification Center (A&CC), as requested by Upper Big Branch Mine Accident Investigation Team Leader, Norman Page, conducted a laboratory investigation associated with respect to Remote Control Units recovered from a fatal mine explosion at the Upper Big Branch Mine-South on April 5, 2010.

The components received were:

1. Exhibit No. PE-0209 Matric Limited TX1 Remote Control Approval Number 9B-220-0 (Found between Survey Spads (S.S.) 22701 and 22692 as documented by the Evidence Identification Tag).
2. Exhibit No. PE-0210 Matric Limited TX1 Remote Control Approval Number 9B-220-0 (Found between S.S. 22701 and 22692 as documented by the Evidence Identification Tag).
3. Exhibit No. PE-0211 Matric Limited TX1 Remote Control Approval Number 9B-220-0 (Found in crosscut adjacent to S.S. 22692 as documented by the Evidence Identification Tag).
4. Exhibit No. PE-0238 Matric Limited TX1 Remote Control Approval Number 9B-220-0 (Found at Shield 100 as documented by the Evidence Identification Tag).
5. Exhibit No. PE-0315 Matric Limited TX3 Remote Control Approval Number 2G-4096-0 (Found in TG-22 Entry #3 as documented by the Evidence Identification Tag).
6. Exhibit No. PE-0347 Matric Limited TX3 Remote Control Approval Number 2G-4096-0 (Found in HG-22 Section, #1 Entry RT Crosscut as documented by the Evidence Identification Tag).
7. Exhibit No. PE-0348 Matric Limited TX3 Remote Control Approval Number 2G-4096-0 (Found in HG-22 Section, #3 Entry as documented by the Evidence Identification Tag).

8. Exhibit No. PE-0376 Matric Limited TX3 Remote Control Approval Number 2G-4096-0 (Labeled as "Left Miner Remote TG-22" as documented by the Evidence Identification Tag).

The exhibits were initially documented and photographed during a Preliminary Inspection in the condition in which they were received. The Preliminary Inspection included decontamination of items that were considered potentially biohazardous, documenting visual observations, and photographing conditions of the exhibits. This inspection was conducted as the equipment was received by the Primary Investigator during the accident investigation.

After the Preliminary Inspection was completed, a Detailed Inspection was conducted. The Detailed Inspection included noting any signs of arcing, sparking, or electrical heating on both the outside and inside of the equipment. This involved disassembling the equipment and performing any applicable testing as modified per ASOP2026, Investigative Procedures for Evaluating Equipment from Mine Explosions. At the conclusion of the Detailed Inspection, each piece of equipment was compared to approval documentation.

These inspections and tests found:

- There were no signs of internal heating, arcing, or sparking on any of the units.
- Several minor discrepancies were noted when the Remote Controls were compared to approval documentation. These discrepancies did not affect operation, safety features, or the intrinsic safety of the remotes. A comparison of the components and circuitry under the RF shield for Exhibit Nos. PE-0347, PE-0348, and PE-0376 and under the RF shield and battery potting for Exhibit Nos. PE-0209, PE-0210, PE-0211 was deemed unnecessary by the Accident Investigation Team since they determined that these exhibits were not located near the origin of the explosion.

APPENDIX U-2

EXECUTIVE SUMMARY OF INVESTIGATION OF LONGWALL LIGHTING SYSTEM COMPONENTS